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ABSTRACT

The author conducted a cross national analysis of sociological research reported in leading journals at two points in time over a ten year period to determine if sociologists' ability to produce valid social generalizations had improved significantly over the recent past. The official journals of the United States (American Sociological Review), Canada (Canadian Review of Sociology and Anthropology), and Great Britain (Sociology) were selected for examination. Also included in the analysis were two other highly reputed journals--the American Journal of Sociology and the British Journal of Sociology. Only articles reporting the results of empirical research were included in the comparative analysis. All of the research reports contained in the five journals were examined to determine the research design employed, the type of sample or population investigated, and the method used to collect the data. Results include the following. Particularly in the American journals, but also in the Canadian Review, the analysis revealed changes over the past ten years in the methodological characteristics of published studies such that sociologists' ability to make valid social generalizations may be improved substantially. By taking readings at several points in time, selecting a broadly based sample, and not relying exclusively upon one or two methods of data collection, it is extremely likely that the generalizations produced are less affected by measurement artifacts and instead reflect effects of relevant factors as they impinge upon the variables sociologists seek to explain. (Author/RM)

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SOCIAL GENERALIZATIONS: BIASES AND SOLUTIONS

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SOCIAL GENERALIZATIONS: BIASES AND SOLUTIONS

ABSTRACT

The discipline of sociology is concerned with producing abstract statements of relationship, i.e., generalizations. Factors involved in the measurement process can distort in unknown ways the generalizations reached. Through an historical examination of the predominant research designs employed, the type of samples drawn, and the methods used for data collection, it is contended that the discipline may be entering a new stage in its ability to produce valid social generalizations.

INDEX HEADINGS

Research methodology

Sociology of science

SOCIAL GENERALIZATIONS: BIASES AND SOLUTIONS

In the midst of concern about the status and future prospects of the discipline of sociology (Gordon, 1980; Gray, 1979; Rossi, 1980), I would like to add a positive note. If we can agree that all measurement involves two components, error and the "true" observation, then it would appear that we are making steady, if uneven, progress in reducing the error component, and thus are producing more valid social generalizations.

Science involves a nomothetic approach – the production of statements or assertions which are general in form, and which contain no reference to specific objects, people, places, or times (Przeworski and Teune, 1970). However, no scientific discipline *begins* with a completely nomothetic body of assertions. Empirical tests of theoretical assertions always involve measurement of specific things in a specific space-time context. Because of this, factors pertaining to these specific measurements can influence or bias the results obtained, thus distorting the generalization possible (Roethlisberger and Dickson, 1964 [1939]: 14-20). Furthermore, if these factors pertaining to measurement are constant or systematic, as opposed to random, the realization of valid generalization is severely inhibited (Kish, 1959). In arriving at valid generalizations then, one should always be involved in distinguishing between relevant and artifactual factors.

For example, Marsh (1964) has noted the apparent social generalization discovered in several American studies of a negative correlation between business cycles and male suicide rates. However, because each of the particular studies was conducted in the U.S., an important limiting condition to this generalization was left undiscovered, and became instead an unknown artifact of measurement, thus distorting the generalization. Only when a similar study with an opposite result was undertaken in Ceylon was the discovery of this condition made possible. *In those societies where there is high importance attached to economic aspects of status in the determination of self-esteem,* there is an inverse relation between the business cycle and the male suicide rate.

This example illustrates well how the specific context of research can be confounded in unknown ways with the resulting generalization. If the effects of measurement artifacts are random, then systematic replication is all that is required to reveal the "true" generalization. However, if artifactual factors are systematic, then systematic variation of all contextual factors, including the method of measurement itself, becomes necessary in order to produce a valid generalization. And because we can never be certain whether measurement artifacts are random or systematic (Blalock, 1968), repeated and varied measurement become the watchwords of science.

Three Major Sources of Error

It is the purpose of this paper to identify and examine three major sources of error with respect to current developments in the discipline. Whereas problems involved in our ability to generalize have been documented throughout the history of sociology (Catton, 1964), of particular concern here is the present, and whether or not we are making gains relative to the very recent past. A comparative examination of the research designs employed, samples drawn, and methods used will allow us to draw conclusions concerning the present status of sociological generalizations.

1) Design

As Campbell (1957) has stated, current significant events may operate in unknown ways to influence the generalizations we obtain from our research. The heavy use of cross-sectional research designs has prompted the criticism that sociology is ahistorical (Brown and Gilmartin, 1969; Zaret, 1978). However, as Stouffer (1950) has maintained, because of the lack of control over variables in most of our research, we are more often than not faced with "after" situations. This lack of control, therefore, means that "history" may be interwoven into some or most of the generalizations we produce.

For example, in the 1960's, several studies of students' attitudes toward university were undertaken in an attempt to discover whether students

are primarily academic, collegiate, vocational, or nonconformist types (Clark and Trow, 1966; Golsen et al., 1960; Gottlieb and Hodgkins, 1968). Although the kind of university was controlled for in these cross-sectional designs, the findings nevertheless could be very much affected by the particular economic and political climate of this decade in America. Thus, if the desire is to determine to what extent student orientations to university fluctuate according to the times or remain constant, it is necessary either to conduct longitudinal studies or to cumulate available studies over time (see Feldman, 1971).

2) Sample

Since the mid-1920's, most of all sociological data accumulated have been collected by Americans studying Americans. Although this imbalance is now shifting somewhat, this fact alone could affect the generalizations about social behavior to date if it can be demonstrated that Americans and their culture are somehow unique.

Unfortunately, for our purposes, Americans are unique in a variety of ways. A systematic search by the author of over 40 social science journals from 1970 to 1976 produced 252 cross-national studies in which the United States is represented in the majority of cases. Among other things, a review of these studies reveals that Americans attend church more often (Alston, 1975; Bell, 1974), are more often members of voluntary associations (Curtis, 1971; Smith, 1972), work in more formalized organizations

(McMillan et al., 1973) live in a more bureaucratic society (Frisbie, 1975), have fewer social security programs (Cutright, 1971; Mishra, 1973), have a higher GNP (Mishra, 1973), and are more protective of individual freedom and civil liberties (Gallatin and Adelson, 1971) than the citizens of all or most other developed nations with whom they are compared. The combined independent and interaction effects of these and other differences clearly make the United States a unique cultural entity. Consequently, many of the generalizations that apply to this society might well not apply to other social groups in other nation states.

Even within the United States, historically many of the studies undertaken have not been representative of its citizenry. Although reliable sampling procedures have been known since Booth's study of life and labor in London (Lazarsfeld, 1962:761), either they have not been used to the extent that they should have been, or the generalizations produced have gone beyond that dictated by the sample used. For example, convenience samples of university students have found their way into sociological journals in numbers far outweighing their relative proportion in American society (Foschi, 1980). A simple analysis of the defining characteristics of this group reveals many differences between it and the general populace. Yet all too often, the results obtained from these studies have been used to produce generalizations for the entire American population, a practice bound to introduce severe distortion.

3) Method

Enough studies of the same thing employing different methods of measurement have been undertaken to realize that the actual methods used do produce different results (see for example, Cannell and Fowler, 1963; Gould, 1969; Weiss, 1968). Of great concern since LaPiere's landmark study (1934) is the seemingly exclusive reliance of sociologists on the interview and questionnaire as data gathering instruments (Brown and Gilmartin, 1969; Phillips, 1971). To the extent that verbal or pencil and paper reports of attitudes and behavior are the preeminent method of eliciting data, severe and systematic distortion of the generalizations produced by these means will be the result (see Ajzen and Fishbein, 1977; Deutscher, 1973; Schuman and Johnson, 1976).

A partial solution to the dependence on the interview and questionnaire has been the increased use of multiple indicators in survey research (see Costner, 1969; Curtis and Jackson, 1962); however, a more obvious solution is the use of a much wider range of "tools in the sociologist's armamentarium" (Brown and Gilmartin, 1969:288). It might also be added that to the extent that more than one method is employed in any one study (see Campbell and Fiske, 1959), valid generalizations are more likely to be produced through the strategy of triangulation (Denzin, 1970:297-313).

An Empirical Assessment of Sociological Research

Within the very recent past, serious attention has been devoted to reducing the distortion in generalizations arising from research designs, samples, and methods (see for example, Elder, 1976; Glenn and Frisbie, 1977; Sudman, 1976). Furthermore, it is my contention that this concern is not limited to methodological essays; it is apparent in the actual reports of research results. As a test of this assertion, a systematic analysis of the major sociology journals of the United States, Canada, and Great Britain for 1978 and 1979 was undertaken to ascertain the research designs employed, the kinds of samples drawn, and the methods used in the research studies presented. If it could be determined that a greater proportion of contemporary articles reported diachronic research designs, national and cross-national representative samples or populations and data collected by diverse methods than articles in the past, then confidence in the generalizations produced today should also be proportionately greater.

Procedure

In order to avoid some of the sources of error mentioned above, it was decided to conduct a cross-national analysis of sociological research reported in leading journals at two points in time to determine whether our ability to generalize has improved significantly over the recent past along several national fronts. Accordingly, the official journals of the

United States (*American Sociological Review*), Canada (*Canadian Review of Sociology and Anthropology*), and Great Britain (*Sociology*) were selected for examination. In addition, two other journals (*American Journal of Sociology* and *British Journal of Sociology*), older than the official organs and also highly reputed (see Glenn, 1971), were included in the analysis. Unfortunatley, a second general sociology journal in Canada (*Canadian Journal of Sociology*) has not been in existence long enough to warrant its inclusion in the analysis.

Only articles reporting the results of empirical research were included in the comparative analysis. All journals contained articles on theory and methodology. These were excluded from examination, as were articles which are properly termed "essays". The essays, ranging over a broad spectrum of topics, did in several instances provide empirical examples; however, no explicit data set was addressed with respect to a series of research questions. This was the basic criterion for inclusion or exclusion.

Because many essays appeared in both British journals compared with the journals from America and Canada, it was decided to examine a two year span of issues in order to ensure that an adequate number of research articles was represented. Accordingly, all issues of *Sociology* and the *British Journal of Sociology* were examined for 1978 and 1979. In the case of Canada, because only one national journal was available for analysis, a similar decision with respect to a two-year examination was made. In the United States, a sufficient number of research articles

appeared in both journals during one year to warrant only a one-year analysis (1978).

The comparative reference point for the British and Canadian journals is 1968 and 1969; for U.S. journals, it is 1968. Because it is contended that the ability to generalize has improved in the very recent past, a ten year lapse represents a rather stringent test of this assertion. If it can be demonstrated that there has occurred significant improvement during this ten year period in research designs, samples, and methods employed, then we can be more confident that the generalizations produced today are also more valid.

Table 1 presents the articles examined during the two time periods classified according to whether they are empirical research reports

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TABLE 1 ABOUT HERE

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or are theoretical, methodological, or "other" essays. It is immediately apparent that there are significant differences between what is contained in the North American and British journals. In both the U.S. and Canada, the research report constitutes the major category of article, whereas in Britain it is only slightly more represented than the scholarly essay.

Reliance on the essay as a medium of scientific discourse is more characteristic of a discipline in its early stages of development.

In Britain in 1960, it has been estimated that there were "rather fewer than forty sociologists teaching in British universities" (Jackson, 1975:19). The predominant concerns at this time were "policy-oriented social or political arithmentic," "problems of social structure, egalitarianism, and social disadvantage," and "a philosophical approach to the general concerns of the discipline" (Jackson, 1975:19-20). These concerns were and continue to be expressed through the essay – social commentary containing illustrative data, impressionistic analyses, and appeals for specific social action and policy.

While it may be stated that sociology in Canada was not particularly more developed than in Britain at a comparable period (in 1960, there were "sixty-one faculty members in sociology" [Hiller, 1979a:129], it did develop more quickly as a result of a massive infusion of American sociologists during the 1960's. "By 1970-71, only 40.3 percent of all sociologists and anthropolcgists in Canada were Canadian citizens while 38.5 percent were American" (Hiller, 1979a:129-30). Consequently, it is little wonder that the distribution of articles in the *Canadian Review* approximates those found in their American counterparts.

Finally, it should be stated that research articles have not always been found in such preponderance in American journals. In a reanalysis of the data presented by Brown and Gilmartin (1969:283), only 42.5 percent of the 200 articles appearing in the *ASR* and *AJS* during 1940-41 were research reports given the basis for classification used in Table 1. Clearly, significant development has also occurred in American sociology.

It is argued here that the essay is not an appropriate vehicle for arriving at valid social generalizations. Notwithstanding the fact that the concerns expressed in essays are often broader than those found in research reports, it is nevertheless also apparent that the main purpose of an essay is to establish an argument or a case using whatever data and illustrations deemed viable, while the objective of a research report is to answer within a specified context a number of explicit questions, ideally letting the chips fall where they may. Over the long run, this cumulative enterprise will be productive of valid generalizations. Hopefully, the distribution of articles in non-American journals will contain a greater proportion of research reports in the years to come.

All of the research reports contained in the five journals during the two specified time periods were examined to determine the research design employed, the type of sample or population investigated, and the method used to collect the data. The following assignment rules were followed:

a) Design. Articles were classified according to whether measurement occurred at one point or more than one point in time. Longitudinal designs included the rare laboratory experiment in which measurement took place over short periods of time, as well as historical analyses which examined documents and records over long time spans.

b) Sample. Articles were also classified according to the sampling frame used. If the research involved some sample or population that was

not representative of the entire nation state in which the journal was published, the article was categorized as national (local). If, on the other hand, the data were representative of the nation, it was termed national (representative). Obviously, studies based on census data are representative, as are those involving national interview surveys and secondary analyses of records involving the whole country. Finally, if any foreign samples or populations were presented, these were classified as foreign. Cross-national as well as non-comparative studies were included in this category.

c) Method. All methods of data collection reported in the research articles were recorded as long as there was some evidence in the results section that these methods were partially responsible for producing the data set that was analysed. Four categories of methods were established: interview, questionnaire, secondary analysis, and other. If a research study was based on the results of a sociological interview or questionnaire survey, regardless of whether the author(s) actually collected the data or they were collected by others, the report was classified as an interview or questionnaire study. There is developing a common practice in the discipline whereby research institutes and data banks make their data available for others to analyse. All of the articles employing these data sets are categorized according to the methods originally used to collect these data. However, data collected by census enumerators and pollsters are termed secondary in that clearly the original data were collected for purposes other than sociological analysis. Other types of secondary data include

official statistics, registers, personal and organizational records, election returns, historical documents, indexes, and cumulations of other studies for the purpose of reanalysis. Content analysis, being based on secondary sources, is also classified as secondary. Finally, "other" methods of data collection include participant and objective observation, lab experiments, and various psychological tests.

Results

Table 2 presents the analysis of the research articles published

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TABLE 2 ABOUT HERE

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in the five journals for the two time periods according to design, sample and method characteristics. Looking first at the research designs employed, it will be noted that there has occurred an overall increase in the use of longitudinal designs compared with ten years earlier. In 1968,[1] the largest percentage of articles with at least two measurements in time is 38%; in 1978, the comparable figure is 51%. Correspondingly, there is also a minimal increase in the bottom end of the range (29% to 31%).

Although in British journals there is a slight decrease in time series studies from 1968 to 1978, there is greater reliance being placed on

these designs by researchers appearing in American and Canadian journals. Particularly in the U.S., the change is dramatic, such that half of the articles in 1978 took measurements at more than one point in time. Moreover, this result is consistent with regard to both the *ASR* (52%) and the *AJS* (50%). The typical longitudinal design reported in these five journals encompasses a ten to thirty year period, and involves an analysis of either secondary data (quite often census material) or national interview surveys. However, time spans of up to one hundred years are reported in the journals of all three countries.

Looking now at the samples which comprise the data sets in these research articles, close to 60% of all studies in 1978 involve either representative national or foreign samples. This signifies a marginal increase over 1968, although there is considerable between-country variation, largely a reflection of the development of the discipline in the three countries involved.

In 1978 compared with the decade earlier, U.S. journals included a much greater proportion of articles analysing foreign data sets (*ASR*=24%; *AJS*=28%). There appears to be a conscious decision on the part of journal editors and researchers alike, now that a large national data base has been established, to broaden the empirical bases for generalization by examining previously researched relationships using foreign and cross-national data sets.

In Canada, however, a much different situation prevails. Only very recently have data concerning the structure and process in this country

on a national basis been systematically collected and made available. Apart from census data, a real paucity has existed that is now remedied in part by the appearance during the latter 1970's of articles analysing both large-scale national surveys and secondary data. Prior to this period, the *Canadian Review* contained many "foreign" articles examining largely American data. Thus, the substantial change in samples between 1968 and 1978 represents both editorial policy as well as a heightened national consciousness (Hiller, 1979a).

In Britain, a different situation again exists. The *British Journal of Sociology* has long operated as an international forum. In 1968, fully 60% of its research articles involved foreign data sets; ten years later produced little change (55%). *Sociology*, by contrast, is the organ of the national association, and is very much a national journal concerned with the establishment of a national data base. In 1968, having been in existence for only one year, 85% of its articles dealt with either local (50%) or representative (35%) national data sets, while in 1978, the corresponding figures are 62% (local) and 31% (representative). Consequently, examination of the samples analysed in the journals under examination is reflective of different stages and rates of development of the discipline in these countries.

Finally, with regard to the methods of data collection used in these studies, the ten year comparison reveals that the questionnaire has dropped considerably in popularity as a research tool, although the frequency with which the interview is used has remained constant or even

increased. This is partially explained by the continuation of large-scale national surveys in the U.S., and the emergence of this type of research in Canada and Britain.

Within the ten years, reliance on secondary data in American journals has increased to a point comparable to the journals in the other two countries, such that now almost two-fifths of the data analysed in these five journals have come from secondary sources. While it may be noted that there are only two ways of gathering data, asking or observing (Hagedorn and Hedley, 1980:57), and therefore, secondary data are subject to the same sources of error when they were originally collected as primary data are, nevertheless secondary data are collected under many different conditions by diverse agents.

Secondary data are the contemporary archives — accretion measures left by a group or society indicating the social facts which constrain and guide the actions of the individuals which comprise it (see Durkheim, 1964 [1895]; 1-13; Webb et al., 1966:35-111). Whereas many secondary data may be collected obtrusively, these obtrusions are part of the normal expectations of ongoing social existence, and are therefore relatively non-reactive measures of behavior. Registration of births, deaths, and marriages, newspaper articles, educational and other institutional records, official statistics, election returns, legislative bills, court transcripts, and diaries, letters, and biographies all make up the fabric that constitutes social life.

Thus, to the extent that they are varied, secondary data probably are not subject to systematic error to the same degree as data collected exclusively by one or two methods. Examination of the sources of secondary data in these five journals attests to their diversity. Together they provide a richness of data which approximates social behavior in all of its manifestations. An overall increase in the use and variety of secondary data from 1968 to 1978 should dispel criticism that "the sociologist today limits himself rather generally to the construction and conduct of questionnaires and interviews" (Brown and Gilmartin, 1969:288).

Discussion

Different rates of changes, and even differences in the direction of change, may be witnessed in these five journals over the ten year period. The proposition that a greater proportion of contemporary journal articles report diachronic designs, national or cross-national representative samples, and a greater diversity in data collection methods than articles written ten years earlier appears to be substantially confirmed in the United States, marginally supported in Canada, and rejected in Britain (see Table 3).

TABLE 3 ABOUT HERE

Particularly in the American journals, but also in the *Canadian Review*, the analysis has revealed changes over the past ten years in the methodological characteristics of published studies such that our ability to make valid social generalizations may be improved substantially. By taking readings at several points in time, selecting broadly based samples, and not relying exclusively upon one or two methods of data collection, it is extremely likely that the generalizations produced are less affected by measurement artifacts and instead reflect real effects of relevant factors as they impinge upon the variables we seek to explain.

Given the differences in findings among American, Canadian, and British journals, it is important to address the issue of future developments in our ability to generalize. Is the "American model" symptomatic of things to come in the other national journals? There is reason to believe that it is.

Although the discipline of sociology is reputed to be about 150 years old (Catton, 1964:914-15), professionally and organizationally, it is considerably younger, and there are substantial differences among countries as to when it was officially recognized. The first sociological association to form in the United States occurred in 1905 (Rhoades, 1980). It was not until 1951 that a similar association formed in Britain (Banks, 1967), and in Canada, the first autonomous sociology and anthropology association came into being in 1965 (Anderson et al., 1975). The establishment of sociology journals in these countries follows a similar rank ordering. Given these criteria, the United States is the most developed sociologically,

and Canada the least. However, it has also been mentioned that Canada, due to its proximity to the U.S., has been greatly influenced by this country. This is reflected in the figures in Table 3.

If the development of a science involves its increasing ability to produce nomothetic statements (Reichenbach, 1951:5), one would indeed be surprised, not to mention disappointed, to find that the U.S., given its history, was not more advanced in this endeavor vis-à-vis Canada and Britain. The growth of a discipline occurs through the cumulating and digesting of specific data in order that more abstract, general assertions can be made. For sociology, this means the study of particular groups within a national context at discrete points in time (Hiller, 1979b). Only later in this developmental process is it possible to break out of specific space-time contexts into statements of a more general variety. Given the developments of sociology in these three countries and what is currently being published in their national journals, it would appear that the discipline may be entering a new stage in its ability to produce valid social generalizations.

Notes

1. To avoid awkwardness in style and presentation, the first period of comparison, whether it be 1968 (i.e., American journals) or 1968 and 1969 (i.e., Canadian and British journals), will be referred to throughout as 1968. Similarly, the second period is termed 1978.

Table 1. Types of Articles Published in Five Major Journals in the United States, Canada and Britain, 1968-69 and 1978-79.

Type of Article	United States[1]		Canada[2]		Britain[3]	
	1968	1978	1968-69	1978-79	1968-69	1978-79
Research Report	74%	73%	75%	77%	45%	40%
Essay: Theory	12	15	3	0	15	19
Methodology	10	8	3	2	9	6
Other	4	5	19[5]	21[6]	31[7]	35[8]
Total[4]	100%	101%	100%	100%	100%	100%
(N)	(93)	(102)	(32)	(48)	(88)	(98)

1. Journals represented: *American Sociological Review*, Vols. 33 and 43; *American Journal of Sociology*, Vols. 73(4,5,6), 74(1,2,3), 83(4,5,6), 84(1,2,3).
2. Journal represented: *Canadian Review of Sociology and Anthropology*, Vols. 5, 6, 15, and 16.
3. Journals represented: *Sociology*, Vols. 2, 3, 12, and 13; *British Journal of Sociology*, Vols. 19, 20, 29, and 30.
4. The difference between column sums and 100 is due to rounding error.
5. One of these was an anthropology research article.
6. One issue (15:2) was a special collection of articles on Quebec. It contained four brief comments and two essays, all of which have been classified as "other."
7. Includes one proposed study.
8. Includes five brief comments on earlier essays and one lead article obituary.

Table 2. Design, Sample and Method Employed in American, Canadian and British Journal Research Articles, 1968-69 and 1978-79.[1]

Methodological Characteristics	United States 1968	United States 1978	Canada 1968-69	Canada 1978-79	Britain 1968-69	Britain 1978-79
Design[2]						
Cross-sectional	70%	49%	71%	62%	62%	69%
Longitudinal	30	51	29	38	38	31
	100%	100%	100%	100%	100%	100%
	(69)	(74)	(24)	(37)	(40)	(39)
Sample[3]						
National (local)	51%	38%	52%	46%	35%	40%
National (representative)	33	36	10	51	28	23
Foreign	16	26	38	3	38	37
	100%	100%	100%	100%	101%	100%
	(69)	(74)	(21)	(37)	(40)	(35)
Method[4]						
Interview	45%	41%	33%	43%	36%	45%
Questionnaire	24	12	30	16	13	10
Secondary Data	22	36	30	39	38	36
Other (lab experiment, observation, etc.)	9	10	7	2	13	10
	100%	99%	100%	100%	100%	101%
	(76)	(80)	(27)	(44)	(45)	(42)

1. See notes 1-4 in Table 1.
2. The number of cases reported in the section on Design is equal to the actual number of research articles examined.
3. In a few articles the sample was not explicitly specified. Hence, there are some discrepancies between the number of cases reported in the Design and Sample sections.
4. In some articles of all journals for both time periods, more than one method of data collection was reported. Consequently, the number of cases in the Methods section exceeds the actual number of articles.

Table 3. Percentage Change in Selected Methodological Features of Journal Articles[1] from 1968 to 1978.

Percentage Change in Articles Reporting:	Countries in which Journals Appear		
	United States	Canada	Britain
Longitudinal designs	+21%	+9%	-7%
Representative national and foreign samples	+13	+6	-6
Secondary data sources and "other" methods	+15	+4	-5

1. See notes 1-3, Table 1 for a listing of the journals represented.

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